CS Scuffle

Product Backlog

Team 25 Members:

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1 Problem Statement

One of the main goals of any website is to be interactive and engaging with its visitors. Sometimes, pages such as directories can be simply a little boring. To solve this, we are utilizing the objects and pictures on the page itself to create a lighthearted battle game. The Purdue Computer Science directory is one page that we have picked out that could use our idea to add a new feature that will encourage more CS students to utilize the page.

2 Background Information

Target Audience

The audience for our project is largely students in the CS/DS departments at Purdue, who are seeking a more engaging experience with the computer science course webpages. We would offer students the opportunity to engage with the web pages through a lighthearted battle game which allows them to interact with various elements of the CS pages, including course titles, course descriptions, and professor images.

Similar Products & Limitations

Similar platform games do exist; Google Gravity, for instance, uses the Google search page as an arena for a game which turns webpage elements into game objects. However, this product is limited in it's personal connection to users. Our product offers a more personalized gameplay experience; users can use the images of professors they have interacted with or classes they have taken as game objects, and this allows them to connect more personally with the game. Our product also allows users to play a game with a more established objective; Google Gravity allows for interaction with the webpage, but doesn't offer any extra gameplay functionality. Our product would allow users to have a more satisfying gameplay experience, with more concrete goals and accomplishments for their players.

3 Functional Requirements

1. As a user, I would like to see a game start page that looks like a near exact replica of a Computer Science Department webpage.
2. If time permits - As a user, I should be able to choose between single or mutli-player options from the game menu at the start of the game.
3. If time permits – As a user, I should be to choose between a player v. opponent game or a team v. team game with multiple players on each team.
4. As a user, I should be able to choose between an easy or difficult game playing experience at the start of the game.
5. As a user, I should have access to an options menu allowing the user to change the game's controls.
6. As a user, I would like to see an initial instruction tutorial at the start of the game so I understand the initial setup process..
7. As a user, I should see instruction pop ups over the course of the game so that I know what to do during each phase of the game.
8. As a user, I would like to be able to create a unique username for the duration of the game.
9. As a user, I would like to select from a roster of players for a player v. opponent game, so that I can choose my own game avatar and an avatar for the opponent.
10. If time permits – As a user, I would like to select from a roster of players for a team v. team game, so that I can select my teammates and the opposing team's players.
11. As a user, I would like to see a transition from the start page to a game arena page which looks like a near exact replica of a Purdue Computer Science Department webpage.
12. As a user, when I select an "easy" game difficulty, I should play against an AI opponent whose intelligence is low.
13. As a user, when I select a "hard" game difficulty, I should play against an AI opponent whose intelligence is high.
14. As a user, I should be able to see visual indicators of the stamina of myself and my opponent.
15. As a user, I should see the time I have remaining to defeat my opponent.
16. As a user, I should see the game end when the timer runs out.
17. As a user, I should be able to use my keyboard to direct the movement/actions of my avatar across the web page.
18. As a user, I should be able to pick up and interact with objects on the web page to reduce my opponent's stamina.
19. As a user, I should be able to break objects by bumping it so that after a certain amount of impacts, an object is removed from game play and can no longer be thrown.
20. As a user, I should be able to see a visual indicator of the object's remaining durability.
21. If time permits – As a user, I should be able to pick up larger objects to throw at my opponent so that their stamina is impacted more.

22. If time permits - As a user, I should be able to interact with certain webpage items to improve/restore my stamina
23. If time permits - As a user, I should be able to interact with certain webpage items to improve stamina damage dealt to my opponent for a short time.
24. If time permits - As a user, I should see a visual indication of what webpage items have special effects such as restoring stamina or increasing stamina damage.
25. As a user, I would like to see an animation when an object or avatar is removed from the game
26. As a user, I should see a visual indicator when an object from the arena/webpage bumps into my character or my opponent.
27. As a user, I should be able to select a keyboard key so that I can use my character to bump/impact my opponent.
28. As a user, I should be able to select a keyboard key so that I can block an incoming bump from my opponent.
29. As a user, I should see a visual indication that I successfully blocked an incoming bump.
30. As a user, I should be able to parry an incoming bump from my opponent if I block at a specific time. A parry should allow me to bump my opponent while blocking their bump.
31. As a user, I should see a visual indication that I successfully parried an incoming bump.
32. As a user, I should see an animation/visual indicator when my character bumps into my opponent.
33. As a user, when I bump an opponent or when an opponent bumps me the recipient of that bump should be knocked backwards.
34. As a user, there should be a brief moment of invulnerability after being bumped by an opponent to avoid being stun locked.
35. As a user, I should see a stage transition to a new web page after a set amount of time has passed.
36. As a user, I should transition to another web page once all interactable objects are destroyed.
37. As a user, I should have the option to disable or enable stage transitions.
38. As a user, I should experience several game arena webpages, where I see a new area with each level of game play or with other above mentioned transitions.
39. As a user, I would like to be able to keep track of my highest score within a period of time.
40. As a user, I should see my high score visually displayed and labeled with my username.
41. As a user, I would like to see a popup at the end of the game to show the winner of the game.

4 Non-Functional Requirements

Usability

It should be easy to navigate between phases of game play, with a minimal learning curve for a beginner playing the game for the first time. We will make the product easily usable across various screen sizes with adjustable resolution.

Performance

Frame rate should be at least 30 fps with a response time of at the most 70ms.

Security

Security is not a pressing concern for this game. The elements we will be duplicating for gameplay are all publicly-accessible. Users will only be able to see information that they could view on the Computer Science Department's public webpages.

Architecture

The front end for our web-based game will be hosted using GitHub Pages, and the rendering will be managed using the framework Phaser, which will make it easier to support various screen sizes and resolutions.